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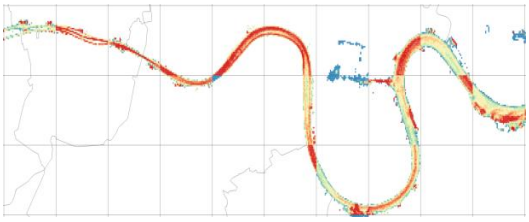
Air Quality Strategy for the Tidal Thames

PORT OF LONDON AUTHORITY

A 'Beat Air Pollution' Case Study for World Environment Day 2019

By Tanya Ferry CEnv

Use of the capitals waterways to carry cargo and passengers has long been proven to reduce the number of lorry journeys on its roads. But as road emissions are getting cleaner the river was at risk of creating a different emission source, until the Port of London Authority developed the Air Quality Strategy for the Thames, and invested in new technologies and fuels.



"The aim with this strategy is clear: we want to reduce emissions to air from marine sources on the Thames. By achieving this we will also be able to meet the growing demand to use the river as an essential part of our transport network, whether it be passenger travel or moving freight."

- Robin Mortimer, Chief Executive

The Strategy sets reduction targets over the next 25 years, in particular of NOX and PM's by 50%, whilst still growing activity within the Port of London. To start to achieve these targets, the Strategy proposes a total of 18 actions which will be implemented over the next five years (pages 2 - 4). The achievement of these actions will require partnership working with operators, central and regional government, and riparian boroughs, all of whom, together with the public, have engaged with us to draft and execute the strategy.

The Results

Uptake of the green discount for international calling ships has doubled and so has the discount offered. At least three different vessels fleets, in the top five emitting types, are already implementing changes to improve their operations.

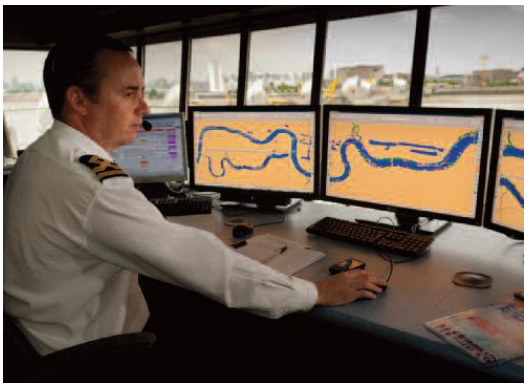
The river remains a low percentage of London's emissions and use of the river for cargo has increased.

We are committed to working together to make the river the cleanest since the Industrial Revolution.

Further Information

Green Discount

Vessels visiting the Port of London that can show that they go beyond regulatory environmental requirements are eligible for a discount on charges made by the Port of London. The discount is automatically applied to vessels registered under the Environmental Ships Index scheme with a score of 30, or above. This index scores individually on NOx, SOx, CO2 and provision of on shore power. The total score is 100. Worldwide use of this index created by ports for shipping operators provides a greater incentive for change.



Action Plan

Standards

1- Consideration of standards for improvement in inland fleet, for the inland vessels

2- Review and improve the green tariff (already reviewed in 2019 since 2017 implementation)

Communication and Education

3- Encourage freight on the river, including being more efficient with already moving vessels, i.e. last mile delivery and postage.

4- Providing guidance for developers and planners of the benefit of use of the river, while driving emission reductions

5- Guidance for inland fleet operators who don't necessarily have in house expertise or resources (Completed)

Technology/solution development

6- Encouraging the installation of green infrastructure on sites using the PLA's river works licencing powers. (Implemented and running)

7- Identify and secure funding for R&D (linked to 8, 9, 10, 11, 12 and 17)

8- Host of environment technology EXPO to bring together inland fleet with technology providers to improve the market (September 2019)

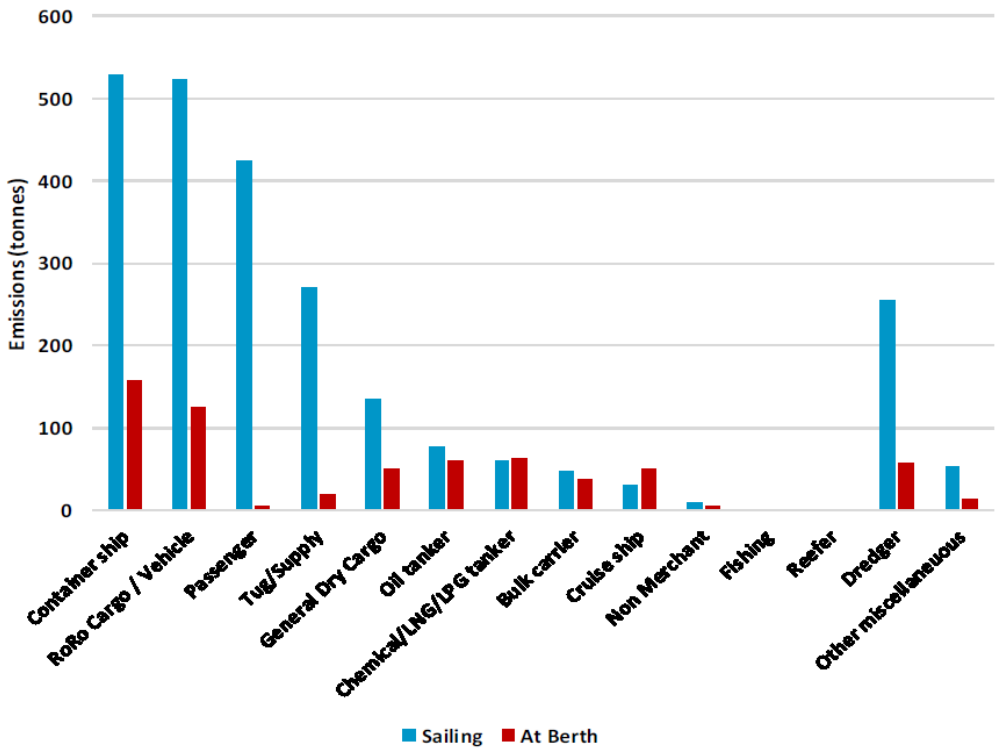
9- Lessons learnt from trials, shared in a sensitive manner to help similar operators choose appropriate solutions due to their diversity, not one solution will fit all.

10- Retrofitting fleets, and promotion of the results (linked to 7 and 9)

11- NOx abatement project, previously based on funded project, now a complete replacement of engine with post combustion abatement. (underway and monitored by 7)

12- Cost benefit analysis – the PLA has to make clear assessments as to based on the local or total need and its effectiveness to implement change

Figure 4.1.2: NO_x emissions by ship type in 2016

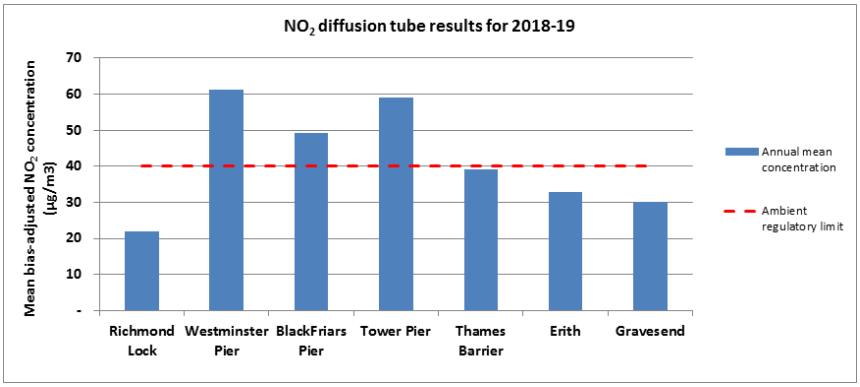


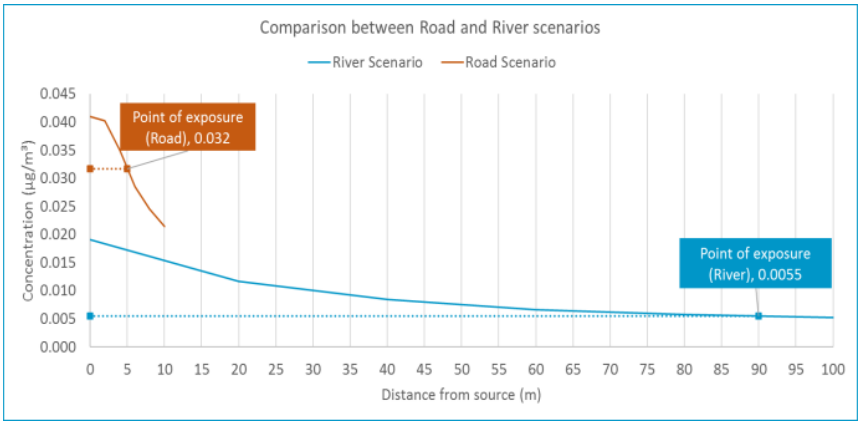
13- Shoreside Feasibility at sites that the PLA does manage in order to evaluate the available power, possibility of the ships calling to plug in and the emissions saved as a result.

14- LNG and alternative fuel feasibility for their lifecycle contribution to reducing emissions, without increasing carbon or compromising safety.

Monitoring

15- Diffusion tube across the Thames and from the Thames into the road network to establish if the riverside paths provide a clean air route.





16- Carry out modelling of river emission dispersion, this is in part with Transport for London on the London Inventory, which has now been completed, and partly below, in both cases working the Kings College London.

17- Exhaust monitoring in the inland fleet to add to the road vs river scenarios that had been initially undertaken, in addition the pre and post impact/benefit of solutions can be quantified across different types of vessels, operations and areas of the Thames (Partnering with UCL Mechanical Engineering to monitor exhaust emissions before and after trials are implemented).

18- Ambient monitoring for marine emissions, this was planned to be rolled out following action 16, highlighting areas of concern in 2020. However due to local concern around a cruise mooring we have implemented a network of real time monitors around the site, and will be producing analysis with meteorological data at the end of the year. The data has been made live (as much as the database allows), here.

And cheating – there are actually 19 actions!!

19- To update the port wide inventory, and action plan in 2021-2022